

**What is claimed is:**

- 5 1. A method for decreasing airway hyperresponsiveness or airway inflammation in an animal, comprising administering to said animal an antisense compound 8 to 50 nucleobases in length targeted to a nucleic acid molecule encoding a human p38 $\alpha$  MAP protein kinase to said animal.
- 10 2. The method of claim 1 wherein the antisense compound is 20 to 50 nucleobases in length.
- 15 3. The method of claim 1 wherein the antisense compound is 13 to 30 nucleobases in length.
4. The method of claim 1 wherein the antisense compound is 20 to 30 nucleobases in length.
- 20 5. The method of claim 1 wherein the antisense compound is 19 to 23 nucleobases in length.
6. The method of claim 1 wherein the antisense compound comprises a DNA-like oligomeric compound.
- 25 7. The method of claim 1 wherein the antisense compound comprises an RNA-like oligomeric compound.
8. The method of claim 1 wherein the antisense compound 30 comprises an oligonucleotide.
9. The method of claim 1 wherein the antisense compound comprises a chimeric oligonucleotide.

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10. The method of claim 1 wherein the antisense compound is a single-stranded compound.

11. The method of claim 1 wherein the antisense compound is 5 a partially double-stranded compound.

12. The method of claim 1 wherein the antisense compound is a fully double-stranded compound.

10 13. The method of claim 1 wherein the antisense compound is an unmodified compound.

14. The method of claim 1 wherein the antisense compound is a chemically modified compound.

15 15. The method of claim 1 wherein the antisense compound comprises at least one modified internucleoside linkage.

20 16. The method of claim 15 wherein the modified internucleoside linkage is a phosphorothioate linkage.

17. The method of claim 1 wherein the antisense compound comprises at least one modified sugar moiety.

25 18. The method of claim 1 wherein the modified sugar moiety is a 2'-O-methoxyethyl moiety.

19. The method of claim 1 wherein the antisense compound comprises at least one modified nucleobase.

30 20. The method of claim 19 wherein modified nucleobase is a 5-methyl cytosine.

21. The method of claim 1 wherein the antisense compound is 35 a chimeric antisense compound.

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22. The method of claim 1, further comprising administering an anti-asthma medication to said animal.

5 23. The method of claim 1 wherein said antisense compound comprises at least one lipophilic moiety which enhances the cellular uptake of said antisense compound.

10 24. The method of claim 1, wherein said antisense compound is aerosolized and inhaled by said animal.

25. The method of claim 1, wherein said antisense compound is administered intranasally, intrapulmonarily or intratracheally.

15 26. The method of claim 1, wherein said airway hyperresponsiveness or airway inflammation is associated with asthma.

20 27. The method of claim 1 wherein said animal is a human.

28. The method of claim 1 wherein the antisense compound has SEQ ID NO: 90, 156, 186, 330, 331, 367, 394 or 410.

25 29. A method of modulating cytokine release into the airway of an animal, comprising administering to said animal an antisense compound 8 to 50 nucleobases in length targeted to a nucleic acid molecule encoding a human p38 $\alpha$  MAP protein kinase.

30 30. The method of claim 29 wherein modulating cytokine release into the airway is decreasing release of one or more cytokines into the airway.

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31. A method of reducing airway mucus production in an animal, comprising administering to said animal an antisense compound 8 to 50 nucleobases in length targeted to a nucleic acid molecule encoding a human p38 $\alpha$  MAP protein kinase.

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32. A pharmaceutical composition comprising an antisense oligonucleotide targeted to nucleic acid encoding human p38 $\alpha$  MAP kinase in a formulation suitable for intranasal, intrapulmonary or intratracheal administration.

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33. The pharmaceutical composition of claim 32, wherein said composition is in a metered dose inhaler or nebulizer.

34. An antisense compound 8 to 50 nucleobases in length targeted to the coding region of a nucleic acid molecule encoding a p38 $\alpha$  mitogen-activated protein kinase, wherein said antisense compound inhibits the expression of said p38 mitogen-activated protein kinase and comprises at least an 8-nucleobase portion of SEQ ID NO. 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 257, 258, 259, 264, 265, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 341, 343, 344, 345, 346,

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5 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407,  
408, 409, 410, 411, or 412.

35. The antisense compound of claim 34 which is 20 to 50 nucleobases in length.

10 36. The antisense compound of claim 34 which is 13 to 30 nucleobases in length.

15 37. The antisense compound of claim 34 which is 20 to 30 nucleobases in length.

38. The antisense compound of claim 34 which is 19 to 23 nucleobases in length.

20 39. The antisense compound of claim 34 comprising a DNA-like oligomeric compound.

40. The antisense compound of claim 34 comprising an RNA-like oligomeric compound.

25 41. The antisense compound of claim 34 comprising an oligonucleotide.

42. The antisense compound of claim 34 comprising a chimeric  
30 oligonucleotide.

43. The antisense compound of claim 34 which is a single-stranded compound.

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44. The antisense compound of claim 34 which is a partially double-stranded compound.

45. The antisense compound of claim 34 which is a fully 5 double-stranded compound.

46. The antisense compound of claim 34 which is an unmodified compound.

10 47. The antisense compound of claim 34 which is a chemically modified compound.

48. The antisense compound of claim 34 comprising at least one modified internucleoside linkage.

15 49. The antisense compound of claim 48 wherein the modified internucleoside linkage is a phosphorothioate linkage.

50. The antisense compound of claim 34 comprising at least 20 one modified sugar moiety.

51. The antisense compound of claim 50 wherein the modified sugar moiety is a 2'-O-methoxyethyl moiety.

25 52. The antisense compound of claim 34 comprising at least one modified nucleobase.

53. The antisense compound of claim 52 wherein modified nucleobase is a 5-methyl cytosine.

30 54. The antisense compound of claim 34 which is a chimeric antisense compound.

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55. The antisense compound of claim 34 wherein said p38 $\alpha$  mitogen-activated protein kinase is human p38 $\alpha$  mitogen-activated protein kinase.

5 56. The antisense compound of claim 34 wherein said p38 $\alpha$  mitogen-activated protein kinase is rodent p38 $\alpha$  mitogen-activated protein kinase.

10 57. The antisense compound of claim 34 wherein said antisense compound inhibits the expression of said p38 $\alpha$  mitogen activated protein kinase and does not substantially inhibit the expression of p38 $\beta$  mitogen activated protein kinase.

15 58. A pharmaceutical composition comprising the antisense compound of claim 34 and a pharmaceutically acceptable carrier or diluent.

20 59. The pharmaceutical composition of claim 58 further comprising a colloidal dispersion system.

60. The pharmaceutical composition of claim 58 wherein the antisense compound is an antisense oligonucleotide.

25 61. A method of inhibiting the expression of p38 $\alpha$  mitogen-activated protein kinase in cells or tissues comprising contacting said cells or tissue with the antisense compound of claim 34 so that expression of p38 $\alpha$  mitogen-activated protein kinase is inhibited.

30 62. A method of treating an animal having a disease or condition associated with a p38 $\alpha$  mitogen activated protein kinase comprising administering to said animal a

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therapeutically or prophylactically effective amount of the antisense compound of claim 34 so that expression of said p38 mitogen activated protein kinase is inhibited.

5 63. The method of claim 62 wherein the disease or condition is an inflammatory or autoimmune disease.

64. The method of claim 63 wherein said inflammatory or autoimmune disease or condition is rheumatoid arthritis,  
10 airway inflammation, airway hyperresponsiveness or asthma.

65. The method of claim 64 wherein the airway inflammation is lung inflammation.

15 66. The method of claim 64 wherein the asthma is allergic asthma.

67. The method of claim 62 wherein said disease or condition is heart disease.